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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/786,650	02/24/2004	Alexander William Oxford	56476-DIV1 (71661)	2990

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EXAMINER

TRUONG, TAMTHOM NGO

ART UNIT	PAPER NUMBER
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1624

DATE MAILED: 05/06/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/786,650

Applicant(s)

OXFORD ET AL

Examiner

Tamthom N. Truong

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 16-25 and 51-53 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 16-25 and 51-53 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☒ Certified copies of the priority documents have been received in Application No. 09/964,260.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|--|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>2-24-04</u> . | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

Applicant's preliminary amendment of 02-24-04 is acknowledged and entered. Claims 1-15 and 26-50 have been cancelled. Claim 16 has been amended. Claims 51-53 have been added. Pending claims are 16-25 and 51-53.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

1. Claims 16-25 and 51-53 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The following reasons apply:
 - a. The term "*derivatising*" or "*derivatised*" gives the process indefinite metes and bounds because it is not clear what reaction is intended. Would "*derivatising*" mean oxidizing, reducing, coupling, conjugating, or simply mixing?
 - b. Claim 16 recites the limitation of "*one or more compounds capable of reacting*" which has indefinite metes and bounds because it is unclear how many other compounds are involved, and what their chemical structures are. It is also not clear if additional steps take place.
 - c. Claims 17-25 and 51-53 are rejected as being dependent on claim 16 and carrying over the indefinite limitations. Note, although claim 53 recites a process of specific

compounds, said process still carries over indefinite limitations of claim 16, and therefore, is also rejected.

d. Claim 51 recites the limitations of “*each of R^1 and R^2 represents a C_{1-6} alkyl; R^1 and R^2 are the same as each other*” (also the same recitation for R^7 and R^8). It is unclear if the second limitation is a requirement or an alternative. Another words, if R^1 were *methyl*, would R^2 always be *methyl* as well? Or, would R^2 be *ethyl* or *propyl*?

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. **Scope of Enablement:** Claims 16-25, 51 and 52 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for a process of making compounds of formula I wherein X is CR^3R^4 (or compounds of substituted 3,4,6,7-tetrahydro-2H-pyrimido[6,1-a]isoquinolin-4-one), does **not** reasonably provide **enablement** for a process of making compounds of formula I wherein X is OCH_2 (or compounds having the core of pyrimido-benzoxazepin-one). The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make the invention commensurate in scope with these claims.

The following factors have been considered in the determination of an enabling

disclosure:

- (1) The breadth of the claims;
- (2) The amount of direction or guidance presented;
- (3) The state of the prior art;
- (4) The relative skill of those in the art;
- (5) The predictability or unpredictability of the art;
- (6) The quantity of experimentation necessary;

[See *Ex parte Forman*, 230 USPQ 546 (Bd. Pat. App. & Int., 1986); also *In re Wands*, 858 F. 2d 731, 8 USPQ 2d 1400 (Fed. Cir. 1988)].

The breadth of the claims: Claim 16 recites a process of making a tricyclic compound represented by formula I wherein X is CR³R⁴, or OCH₂. When X is CR³R⁴, the tricyclic core is *3,4,6,7-tetrahydro-2H-pyrimido[6,1-a]isoquinolin-4-one*. However, when X is OCH₂, then the tricyclic core has a 7-membered ring of *oxazepine* (i.e., the core is *pyrimido-benzoxazepin-one*). Thus, the scope of claim 16 extends beyond the process of making compounds of pyrimido-isoquinolinone. Claims 17-25, 51 and 52 depend on claim 16, and thus, they have the same broad scope.

The amount of direction or guidance presented: The generic teaching in the specification provides formula IX as a starting material for making a tricyclic core in which X can be CR³R⁴, or OCH₂. However, subsequent steps for adding the side chain of -NH-C(=Y)-NR¹⁰R¹¹ are tailored for compounds of substituted *3,4,6,7-tetrahydro-2H-pyrimido[6,1-a]isoquinolin-4-one* (i.e., X is CR³R⁴), and not for compounds of substituted *pyrimido-*

benzoxazepin-one (i.e., X is OCH₂). Those steps involve the addition of an acid and heat (e.g., see Example 1), which could cause ring opening when X is OCH₂. The specification does not detail conditions or reagents to prevent such a ring opening. Therefore, there is insufficient guidance to make compounds of the instantly claimed formula I when X is OCH₂.

The state of the prior art: As evident by the references cited on the IDS, particularly GB 1,597,717, the process for making compounds of substituted *3,4,6,7-tetrahydro-2H-pyrimido[6,1-a]isoquinolin-4-one* is unique to said ring system, and cannot be extended to another tricyclic system having an oxygen such as the one claimed herein with X as OCH₂. Thus, the state of the prior art does not overcome the deficiency in the enablement provided by the instant specification.

The relative skill of those in the art: Even with the advanced training, the skilled chemist would still have to spend a lot of time and effort in developing a process for making compounds of formula I with X as OCH₂. Such a task would demand a lot of resource.

The predictability or unpredictability of the art & The quantity of experimentation necessary: The chemical art has always been known for its unpredictability. Reactions and conditions for making one compound might not work for others because of factors such as: ring opening, molecular rearrangement, steric hindrance, or unwanted by-products, etc. Thus, with the limited guidance provided for making only compounds of formula I with X as CR³R⁴, the skilled chemist would have to carry out undue experimentation to make other compounds of formula I with X as OCH₂. As has been ruled by the court in *Genetech Inc. v. Novo Nordisk*, failure to disclose any specific starting material or any condition for preparation constitutes lack

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of enablement, and relying on the knowledge of one skilled in the art cannot cure such deficiency in enablement (**Genetech Inc. v. Novo Nordisk**, 108 F.3d 1361, 42 USPQ 2d 1001 (Fed. Cir. 1997)).

No pending claims are allowed.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tamthom N. Truong whose telephone number is 571-272-0676. The examiner can normally be reached on M-F (10:00-6:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James O. Wilson can be reached on 571-272-0661. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Tamthom N. Truong
Examiner
Art Unit 1624

4-27-05


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